APPENDIX C: EDUCATION FOR BOATERS

BOATER ENVIRONMENTAL AWARENESS FACT SHEETS

Many boaters are unaware of the current state and federal regulations regarding washing, sanding, or painting boats. Marina staff may also need to be educated about the law. Some boaters may need information about the facility's operation and procedures, or such things as how to properly operate marine sanitation devices. Ultimately, it is to the marina operator's advantage to see that staff and customers are fully informed about procedures that prevent nonpoint source pollution. When staff and customers are working together to minimize pollution impacts, the facility will have gone a long way toward compliance with state and federal regulations, and the waters near the marina will be cleaner and more attractive.

Methods for sharing this information are numerous and can include:

Newsletters: If you provide a newsletter to your customers, perhaps you could consider a section highlighting different steps that you are taking to protect the environment. This is also a great way to advertise your new services and operations and could be distributed to boaters who are not customers.

Inserts: Billing statements provide an opportunity to bring your customers up-to-date.

Meetings: Consider hosting a meeting for your tenants and other boaters to explain your facility's services and rules. Your local harbormaster or Coast Guard Auxiliary/Power Squardron unit should be able to assist you in conducting meetings. A one-on-one demonstration of how to operate different components of the available equipment would make people more likely to use it.

Inspections: Consider offering an additional service to your customers by inspecting their existing activities and correcting any problems that may lead to improper operations. This could become another step in the winterization or spring commissioning process. The Coast Guard Auxiliary is also available to conduct free boating safety inspections, which include a check of the MSD and overboard discharge valve.

Slip leasing agreement: You can use your tenant contracts to inform boaters new rules and operations. Although marinas do not have the legal authority to enforce state laws, they can declare themselves no-discharge marinas and require tenants to use pumpout stations and ensure that boaters activities prevent incidental spills, and discharge. In most facilities with these requirements, the penalty for discharging and careless operation within the facility is expulsion.

Pamphlets and Flyers: There is a great deal of information being produced by the government and many nonprofit organizations that can be handed out at your facility, perhaps in the ship's store or at the fuel/pumpout dock. Most of the information is free and carries no copyright. Some sources for pamphlets and flyers include:

Maine State Planning Office
Maine Coastal Program
38 State House Station
Augusta, ME 04333
(207) 287-3261

U.S. Coast Guard
Marine Safety Office
312 Fore Street
Portland, ME 04101
(207) 780-3251

Department of Environmental Protection
Bureau of Land & Water Quality
17 State House Station
Augusta, ME 04333
(207) 287-3901

Friends of Casco Bay
2 Fort Road
South Portland, ME 04106
(207) 799-8574

U.S. EPA New England
Waters Program
J.F.K. Federal Bldg.
Boston, MA 02203-2211
(617) 565-3420

Maine Marine Trades Association
20 Beacon Avenue, Suite 7
Biddeford, ME 04005-2931
(207) 282-8814

International Marina Institute
35 Steamboat Avenue
Wickford, RI 02852
(401) 294-9558

Fact Sheets: The following pages contain fact sheets describing activities that cause nonpoint pollution and suggest ways to improve the health of our waterways while enjoying boating. These fact sheets are provided as a source of educational information for the boating public. Marina operators should feel free to copy and distribute them to their customers, or post them in an prominent location.

Fact Sheet #1

Nonpoint Pollution from Boats

Boating Needs Clean Water

Imagine a great day of boating with family and good friends – enjoying a warm sunny day with a gentle breeze, a cooling spray on the face, natural scenery passing by, fine food to eat, and lighthearted conversation. Picture fishing, sailing, water skiing, or just cruising to a quiet harbor. That's the fun image of an ideal boating trip.

Stop! Now visualize that same boat trip on dirty brown water, with drifting oil-soaked debris, and a foul odor. The shoreline is littered with semi-submerged junk and old tires.

That first clean fun picture has now probably changed to uncomfortable displeasure. Clearly a dirty image takes much of the recreational value out of boating. When most boat owners are asked where they like to go, they usually describe clean harbors, rivers, and bays nearby.

Recreational boating is increasingly popular. Its growth has led to a growing awareness of the need to protect our waterways. According to the US. Environmental Protection Agency (EPA), some water pollution comes from boating. While the largest nationwide water pollution sources are still municipal sewage treatment plants, storm sewers/runoff from roads and parking lots, land disposal, agriculture, and industrial plants, boating does add small amounts of nonpoint pollution. It is called incremental pollution – a little here, a little there, scattered widely over space and time. Common pollutants include engine oil, fuel, antifouling paint, hull and bottom sanding, detergents, fish waste, antifreeze, sewage, and litter.

Some nonpoint pollutants are easily seen, such as trash and oil slicks. Others, including heavy metals, toxic compounds, pesticides, bacteria, and viruses, are hidden because they are dissolved in the water and/or absorbed into plants and animals.

While each boat's contribution is so small that it seems almost irrelevant, when added to other boats and to the small amounts from many other sources in an area, it can add up. All boats and marinas should reduce their pollution.

NONPOINT SOURCE POLLUTION

Stormwater runoff is the most common way pollutants get into rivers, lakes and bays. Rain and melting snow running over the land wash away a variety of pollutants – some seen, some unseen. As water flows downhill, it collects more and more contaminants, ultimately running into a waterbody where it can hurt animals and plants.

Nonpoint pollution comes from widespread sources, including pets, lawn fertilizer, oil drops on parking lots, tossed trash, and boats. Some nonpoint pollutants don't need rain to get into the water, such as boat litter, dumped antifreeze spilled on the ground, oily bilge water, fuel tank overflows, and non-biodegradable hull cleaners.

Pollution poses a significant threat to our coastal bays, inland lakes, and river waterways, including:

- metals and chemicals in the tissues of organisms, such as oysters, mussels, and fish, can get into humans when eaten.
- toxic chemicals in the water column can kill or weaken fish.
- high levels of nutrients and organic material in the water can decrease dissolved oxygen, leading to foul odors, fish mortality, and/or algae blooms.
- increased petrochemicals and antifouling paint chips, can kill organisms living in and above bottom sediments.
- high levels of sewage bacteria and pathogens can result in closed shellfish beds or swimming areas.

Nonpoint pollution, because it is spread out, can be hard to find, but often it is easy to prevent and control. The most effective way to control pollution is to stop it at the source.

NATIONAL BOATING GOAL:

Cleaner Water With Nonpoint Pollution Control

All who boat, walk, work, or live along the water have a responsibility to be aware of their potential harmful impacts, however slight, and need to act in ways that minimize those impacts.

What harm will this little bit from my boat do? Probably not much, by itself. But when added to the small incremental pollution from millions of people, every day, our combined impacts can be very large and can significantly degrade the environment. One boat's pollution added to hundreds of other boats crowded into the same small cove, can harm the environment. Boaters can play an important role in controlling nonpoint pollution, by making simple, common sense changes to the way we go boating.

Remember:- Every little bit does hurt.

Every boater is part of the solution.

Fact Sheet #2

Boating + Common Sense = Clean Water

Clean Water is Everyone's Goal

We all need to be concerned about protecting our coastal areas, the habitat and wildlife. We can have profound impacts on the ecosystem of which we are a part if we are careless or simply unaware. Every speck and drop of pollution from boats and marinas, when added to all the bits from thousands of other sources, can really spoil the pleasure we get from boating; ultimately, this pollution can hurt our own health and that of other creatures. Fortunately, we can all help by minimizing these impacts.

The best solution is to follow some common sense rules:

- When doing maintenance and working with chemicals, avoid spills and immediately clean up any remnants.
- Use substances that are environmentally safe, work with small amounts and dispose of waste materials properly.
- Bring trash and waste, especially plastic and sewage, back to port and dispose of them using the proper containers and equipment.
- When handling fuel and other petroleum products, use care and planning to prevent any from spilling into the water.

STEP ONE: CLEAN WATER STARTS WITH EACH BOAT

Go aboard your boat and take a careful look around. Invite boating friends, family, and marine facility personnel to help find ways to improve the environment. Decide what to change, and do it. Tell everyone what the boat's new clean boating rules are when they come aboard. Set an example.

Make sure all your boating neighbors know about nonpoint source pollution and encourage them to also help keep the water clean. Remember, the problem comes from the cumulative impact of each source.

STEP TWO: KEEP A WATCHFUL EYE FOR POLLUTERS AND SPEAK UP

Each person doing his part to make boating more environmentally compatible must also be concerned about every other boater, marina, business, government, and individual who isn't doing their best. Speak up whenever you see someone throwing trash overboard, or allowing bottom sandings to wash into the water, or not using their toilet correctly.

All marinas and yacht clubs should have the necessary facilities and operational practices to help control nonpoint source pollution. Encourage marina managers to use cleaner operations and offer educational pollution control programs for all marina users. Help create a demand for cleaner water, recycling programs, and pumpouts. By being aware, responsible, and proactive, all boaters can help eliminate nonpoint sources of pollution.

Remember:- EACH ONE OF US IS PART OF THE SOLUTION.

Fact Sheet #3

Boat Sanding and Painting

Problem:

When your boat is being sanded or painted – often a messy job – a great deal of dust and paint can fall onto the ground or water. If the paint contains toxic chemicals that can leach out, it can cause environmental harm.

Antifouling paint, for example, is made with toxic chemicals to minimize growth on the boat's bottom during the boating season. However, concentrated amounts of this type of paint, falling or washed into the water during and after hull bottom work, can be harmful to the environment. Therefore, whenever applying or removing antifouling paint, the paint must be contained and not allowed to enter adjacent waterways.

Solutions:

- Because bottom work is best done onshore, it is easy to always use a drop cloth on the ground beneath the hull to catch and then properly dispose of the dry paint sandings and wet paint drops.
- When sanding or grinding hulls over a paved surface, vacuuming loose paint particles is the preferred way to clean up.
- Work indoors or under cover whenever wind can potentially blow paint and dust all over the ground (later to be carried off in the next rain) or directly into the water.
- Use environmentally friendly tools, like a vacuum sander and grinder, which automatically collect and store paint dust before it can get into the environment (or eyes and lungs). Some boatyards have them for rent.
- Use designated sanding and painting areas in marinas and yacht clubs, which are designed to minimize pollution – check with the facility manager.
- Remember, if it is necessary to wear a respirator to keep lungs free and clean from paint dust or sprays, then it is also important to protect the waterways from the same contamination.
- Use a marina/boatyard where the high-pressure washwater is collected and contained, and/or filtered before entering the water.

Rule of Thumb

Keep paint particles from falling on the ground and washing into the water.

Fact Sheet #4

Boat Sewage

Problem:

Boat sewage is a problem when dumped overboard without proper pretreatment. Although the volume of boat waste isn't as great as a typical sewage treatment plant outfall, it still contributes to the overall problem of fecal coliform pollution.

Sewage from marine heads can add extra nutrients to the water which use dissolved oxygen and can stimulate algae growth. In the worst cases, the algae can grow so fast that it uses up the oxygen that fish and other organisms need to live. Untreated wastes can contaminate swimmers and shellfish, potentially leading to serious health problems.

Boaters tend to concentrate in groups, around swimming and fishing areas, thus increasing the frequency and total number of toilet discharges. Federal law prohibits dumping untreated sewage into all navigable waters of the US. Some states have designated 'no discharge areas' where even treated sewage cannot go into the water and only holding tanks can be used.

There are four basic types of toilets that can be used in US. waterways:

- marine sanitation devices (MSD) types I and II, which treat the waste before discharging overboard (legally, only Coast Guard approved MSDs can be discharged at sea);
- MSD type III is the common holding tank which cannot be discharged and needs to use pumpout equipment;
- Portable toilets, which must be carried ashore to be emptied or pumped out; and
- Incineration type toilets, which burn the waste and don't need to be pumped out.

Use Your "Head" (Properly)!

- Type I and II MSDs must be maintained regularly. Keep the disinfectant tank full to ensure the device operates properly.
- MSD type III holding tanks cannot be emptied into any navigable US. waters. Holding tanks can only be dumped in the ocean more than three miles offshore, and the Y-valve must be sealed closed at all times when inshore. When inshore, holding tanks must be emptied at approved shoreside waste-handling facilities, called pumpout stations. Fortunately, pumpouts can be fast, clean and inexpensive – use them. New NOAA navigation charts are adding pumpout sites; most states and cruising guides also list pumpout stations. However, the number of pumpout stations is increasing rapidly – if charts or cruising guides do not show that the marina or boatyard you plan to use has a pumpout station, call the facility to see if one has been installed recently.
- Boats in no-discharge waters, including most lakes and many inland waterways, cannot use MSD type 1, type II or Y-valves at all.
- Boats with portable toilets must take them ashore to be emptied. Never dump them overboard. Many marinas now have special dump stations for portable toilets, which are easy to use.

Rule of Thumb

Use a pumpout station to empty out your boat head.

Fact Sheet #5

Fuel and Oil

Problems:

It is not unusual to see a small fuel sheen on the water surface near docked boats. Although it may only be a tiny amount of fuel from some boats, the cumulative impact on the environment of many small fuel spills can be quite significant. A cup of oil can produce a thin oil sheen over an acre of calm water.

Small gasoline spills, while they quickly evaporate before causing much environmental harm, can cause a safety problem. Hydrocarbons can pollute the marine environment when waste oil from oil changes is dumped on the ground, into storm drains or in dumpsters.

Small fuel and oil spills are easy to prevent.

Solutions:

- Take care during fueling to prevent drops of fuel from falling into the water when removing the fuel nozzle. Listen to the filler pipe to anticipate when the tank is filling to avoid splash back. Have a piece of oil absorption pad handy in case of splashes.

- When fueling, have one of the crew watch to make sure the tanks are not overfilled so that fuel spills out of the air vent. Stop pumping at the first sign of escaping fuel. To prevent any spill, install a fuel/air separator in the air vent line and/or an air vent whistle, but use care to prevent backsplash at the nozzle.

- Today most boating facilities have oil reception facilities for recycling; use them. If the facility or town doesn't recycle, encourage them to do so.

- Have your engines properly tuned – you'll burn less fuel, save money, and have cleaner exhaust.

- Place an oil absorption pad into the bilge and below the engine to collect the drips. Keeping the engine clean makes it easy to spot and correct small leaks before they become a big problem. Some pads (also called 'bilge pillows') can be wrung out when they are full, then reused.

- Used oil filters and oil absorption pads should be placed in a proper leak-proof collection receptacle at the boating facility.

- Don't use dispersants (soap or surfactants) on small oil spills or in bilges. This doesn't eliminate the petroleum in the environment, but just moves it from the water surface to the subsurface areas. Follow the US Coast Guard rules in accordance with the local marina or town practices for responding to small oil spills.

- Remember, the law requires all boats 25 feet and more in length to have a sign posted in the engine compartment about the federal oil pollution control regulations.

- When buying a new outboard motor, consider a 4-stroke engine which will be much cleaner burning than the common 2-stroke motors, and doesn't need oil mixed with the fuel.

Rule of Thumb

Any time you see an oil sheen on the water, something's wrong. Check the engine, tanks, and lines for leaks; tune up the motor; and use oil absorption pads. Use proper fueling procedures. These measures save money and keep boating waters clean.

Fact Sheet #6

Antifreeze and Engine Coolants

Problem:

Small amounts of used antifreeze and engine coolants are toxic, and can harm many marine and aquatic organisms, as well as pets and humans.

Solutions:

- When a boat is to be stored for the winter, drain as much of the water as possible out of all waterlines, the hot water tank, and sewage holding tank in order to minimize or eliminate the use of antifreeze.
- Never let any coolant or antifreeze be dumped overboard or into storm drains.
- Read the container and follow the coolant and antifreeze manufacturer's recommendations for use and disposal.
- When preparing a boat or engine for freezing weather, the orange/pink colored propylene antifreeze – used to protect drinking water lines in boats and RVs – is the better environmental choice. The blue/green colored ethylene glycol is toxic and can kill any birds and animals that drink it.
- Find out where the recycling facilities in the area are located and when they are open. If recycling facilities are not available, ask the marina operator how and where the substances should be disposed of.
- Don't mix different chemicals, such as antifreeze and oil, prior to disposal – especially if they are going to be recycled.

Fact Sheet #7

Washing and Cleaning Boats

Problem:

Washing the boat's topside deck and hull surfaces is a common practice in marina slips. If done sensibly, harmful chemicals used in the washing process can be kept out of the environment. There are basically two environmental concerns to think about.

Many cleaners contain chlorine, ammonia, and phosphates which can harm tiny plankton and fish. Often their biggest impact occurs immediately after entering the water, and decreases rapidly as the chemicals are diluted. However, eventually some of these chemicals find their way into the food chain and can build up in fish flesh which may then be eaten by people. The second concern is that, in the boat cleaning process, antifouling paint may be scraped or chipped off and then enter the water in concentrated amounts which harm marine life.

Solutions:

- Wash the boat frequently with only plain water, a bucket and sponge. Use cleaners only on the dirty spots.
- Buy and use safe, nontoxic, phosphate-free, and biodegradable cleaners for use on the deck, teak, hull and bilge; use these only in small quantities, as needed.
- Substitute natural cleansers, such as vinegar, lemon juice, lime juice, borax, baking soda, and liquid soaps for chemical-based ones.
- Use all chemicals carefully, according to the manufacturers instructions.
- Clean boat bottoms ashore where the washwater and any bottom scrapings and antifouling paint particles cannot run into the waterway. Don't clean the hull in the launching ramp; take the boat inland away from the shoreline. Use a marina or boatyard which has a designated bottom cleaning area. Some areas ban in-water bottom scrubbing, so check with local authorities.
- Use low-volume hose nozzles which shut off when released to conserve water and reduce the runoff from boat washing.

Rule of Thumb

If the cleaner's label warns that the product is harmful to humans, then it is likely to harm marine and aquatic plants and animals as well, and probably should not be used around the waterway.

Fact Sheet #8

Plastic and Floatable Litter

Problem:

Birds and fish often mistake garbage for food, with fatal results. They can also get tangled up in plastic. You have probably seen pictures of six pack rings tangeled tightly around seabirds. Litter comes in all kinds, colors and sizes – bottles, plastic bags, drink cans, coffee cups, six-pack rings, disposable diapers, wrapping paper and fishing line. Cigarette butts with filters are usually the most common type of litter found in boating waters. Each piece of trash adds to a serious problem that can be easily prevented.

Solutions:

- Don't throw any trash overboard; keep it onboard until reaching port where it can be disposed of properly.
- Put cigarette butts in an ash tray and bring them all back.
- Every waterfront facility has trash disposal areas. Many of them provide recycling bins for cans, plastics and glass – use them.
- If the marina facility doesn't recycle, bring all your trash home for recycling and disposal.
- Remember, the law requires all boats 25 feet and more in length to have a sign about the federal trash disposal regulations posted and visible where garbage is stored, such as in the galley.

Rule of Thumb

If the waste didn't come from nature, don't throw it overboard; bring it back for proper disposal.

Fact Sheet #9

Cleaning Fish

Problem:

Sport fishing is very popular, and most of the time the fish are taken ashore to be cleaned, cooked, and eaten. However, there are times when large amounts of fish are gutted and cleaned on the water, such as during fishing tournaments. Fish parts are absolutely biodegradable and can be eaten by other fish, birds and marine animals. But when a lot of fish wastes are discarded into the same waters on the same day, the waste can rot and result in lowered oxygen levels, which can result in odor problems and fish kills. And of course, no one likes to see floating fish heads drifting about for days.

Solutions:

- Clean fish as they are caught offshore, or near fishing grounds on the way back in, so the scraps are widely scattered as natural food.

- In some marina facilities, centralized fish-cleaning stations are available, with cutting tables, washwater, covered trash containers, and frequent waste disposal. Some even have large garbage disposals, which grind, then send the fish waste to the city sewage plant for treatment.

- Encourage marinas and clubs to create compost programs to recycle the fish parts with peat moss for gardens. This process is surprisingly fast, odor-free, and makes excellent mulch.

Rule of Thumb

A few fish parts overboard make good food for fish and sea birds; a lot just floats around for days until it rots. ***Keep fish scraps and waste on board until they can be disposed of properly.***